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Jianli Shi

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EXAMINER

LANGMAN, JONATHAN C

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

10/16/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/553,919	Applicant(s) SHI ET AL.	
	Examiner JONATHAN C. LANGMAN	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5,8-17 and 19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,8-17 and 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 5, 2008 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 5, 9, and 12-15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 5, the applicant states that the second layer comprises a phosphate glass. However there is no specific recitation of the second layer comprising both phosphate glasses and inorganic particles of clay or alumina as now required in

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claim 1. The applicant is only supported for the second layer being mono aluminum phosphate binders comprising the instantly claimed inorganic particles. .

Regarding claim 9, the applicant is not supported for the generic second layer comprising a thickness of "between 10". The second layer thickness endpoints can only be 1 and 15, as originally presented in original claim 10, or can be about 15 microns as taught in [0013] of the PG pub of the original specification. The applicant is not supported for the generic second layer being of any other end point.

Regarding claims 12 and 15, the applicant has not shown and the Examiner can not find support for the amendment to claims 12 and 15, which include adjusting process parameters to obtain density, particle volume fraction, layer thickness and pore size. The applicant is only supported within the originally filed specification for porosity.

Claims 13 and 14 are rejected for being dependent upon a base rejected claim.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 8, the claim limitation is unclear. The applicant has to amend the claims to have antecedent basis of the inorganic particles. As currently presented it seems that there could be other inorganic particles in which the applicant is not supported for.

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Regarding claim 17, similar to claim 8, it is unclear as to what the applicant is claiming, and the inorganic particles of claim 17 should have antecedent basis going to claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 8, 9-16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bouloud (US 5,390,432) in view of Vondracek et al. (US 3,551,183).

Regarding claims 1-3, and 10, Boulud et al. teaches coatings on the interior surface of a steam chamber of a steam pressing iron. The covering on the bottom of the chamber includes a first layer 11 and a second layer 20, wherein the layer 20 is constituted by a water permeable fibrous (porous) material having hydrophilic properties (col. 3, lines 60-65). The first layer 11, is preferably chosen to have good thermally insulating properties, and Boulud teaches that enamel is a preferred embodiment (col. 3, lines 1-12). Enamel is taught by the applicant to be preferred for the first coating, therefore it is said to also be inherently "essentially impermeable to water" and "thermally insulating". A material and its properties are inseparable, therefore it is expected that enamel will be impermeable to water. It has been held that where the claimed and prior art products are identical or substantially identical in structure or are

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produced by identical or a substantially identical processes, a *prima facie* case of either anticipation or obviousness will be considered to have been established over functional limitations that stem from the claimed structure. *In re Best*, 195 USPQ 430, 433 (CCPA 1977), *In re Spada*, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). The ***prima facie*** case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed products. *In re Best*, 195 USPQ 430, 433 (CCPA 1977). Furthermore Boulud teaches the use of other materials that are impermeable to water such as cements, calcium carbonate, paints, carbonates and metallic oxides, thus reading upon the instant claim 1 limitation of the first layer being “essentially impermeable to water”. The second layer of Bouloud comprises a screen or a fibrous mat (porous), and in one embodiment the screen is coated by a hydrophilic material, preferably it is coated in its entirety with a layer of sodium silicate (col. 3, lines 54-60).

Bouloud does not teach the introduction of clay or alumina particles in this second layer. Vondracek teach a steam chamber of a domestic appliance comprising a coating of sodium silicate. The coating has the addition of hydrated alumina particles. The addition of alumina particles improves the physical strength of the sodium silicate coating, and that the coating decreases the solubility, which are desirable characteristics of coatings in the steam chamber (col. 3, lines 8-63). The coating is cured and dehydrated (col. 3, lines 30-35) resulting in an alumina and sodium silicate coating. Vondracek also teach that colloidal clays may be used (col. 4, lines 20-25) to aid in the deposition. It would have been obvious to a routineer in the art to add

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alumina to the sodium silicate second coating of Bouloud, in order to increase the strength of the coatings and to decrease water solubility, and in the case of clays, to aid in the deposition of coating sodium silicate as is known in the art.

Regarding claim 9, Bouloud is silent to the thickness of the respective layers, however thicknesses of respective layers, including those instantly claimed are an obvious choice to a routineer in the art and well within the grasp of a routineer in the art. It would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the thicknesses of the first and second layers for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 8, Vondracek teaches that the alumina particles in the sodium silicate layer have an average particle diameter of 35 microns (col. 3, line 61). However advances in the art of materials science over the years would lead one of routine skill in the art to use a smaller diameter of alumina, including those particle diameters instantly claimed. Basic materials property science teaches that the smaller the article (in this case a reinforcing particle), will result in stronger mechanical properties to the layer, and increased surface area of the particle in the layer. Therefore It would have been obvious to a person having ordinary skill in the art at the time the present invention was made to use a particle diameter of 1 micron or less in order to achieve a desired material composite properties. This determination is well within the grasp of a routineer in the art. Furthermore in regards to the colloidal clay. Hawley's Condensed Chemical

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Dictionary discloses colloid chemistry as the study of matter having dimensions between 1 nm and 1 micron, thus overlapping the instantly claimed ranges.

Regarding claim 11, since the two layers are in contact with one another and subsequently deposited, they are implicitly adhered to one another (If you turn the device of Bouloud upside down the layers will not separate).

Regarding claims 12-15, Bouloud teaches that the first layer may be sodium silicate (col. 3, lines 7) and the second layer comprises sodium silicate (col. 3, lines 57), they are said to be similar. Sodium silicate in the first layer is said to be to some degree impermeable to water and thermally insulating. The addition of hydrated alumina (water being a binder and alumina as a filler) is taught to be an obvious modification to the layer sodium silicate layers of Bouloud. The other limitations of degrees for variations of porosity, density, particle volume fraction, layer thickness, pore sizes, etc. achieved by a certain process are product by process limitations. The layers of Bouloud expressly have some degree of porosity or density or thickness of the layers, and therefor are said to read on the instant claims. The applicant has not claimed a certain degree of these material properties, and therefore if the layers possess any degree of one of these properties it is said to achieve the same product as instantly claimed. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.”, (In re Thorpe, 227 USPQ

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964,966). Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product (In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983), MPEP 2113).

Regarding claim 16, Boulud teaches that all the materials utilized are selected in a manner to withstand thermal conditions normally existing in the chambers (col. 5, lines 5-10) and thus are clearly inherently thermally stable.

Regarding claim 19, the step is a product by process step, the product of Boulud et al. is substantially similar to the product as presented in instant claim 1 therefore it is said to anticipate it. See the product by process case law applied above. Furthermore, Bouloud teaches that it is known and obvious in the art to cure sodium silicate coatings to obtain a more completely reacted coating (col. 3, lines 30-45).

Claims 1, 2, 5, 8-11, 16, 17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bouloud et al. (WO01/68971) referred to herein as WO where (US 6,684,539 is used as the reference) in view of Verweij et al. (US 5,060,406).

Regarding claims 1, 2, and 10, WO teaches a cladding of a vaporization chamber of an iron. The cladding comprises layer 10 which is sodium silicate (applicants instantly claimed first layer), which adheres strongly to the aluminum body (interior of the steam chamber). The layer is treated with a mixture (col. 2, lines 20-23) of

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phosphorous bodies that preferably contains colloidal silica (inorganic) particles (col. 2, lines 24-59). It is expected and inherent that the treatment changes the composition of the first layer, since WO teaches chemical reactions of the first layer and the treatment, (col. 2, lines 23-38), thus forming a second layer on top of the first layer. Therefore the sodium silicate layer reads upon the instantly claimed first layer impermeable to water and is thermally insulating, and the second layer that is hydrophilic is the top portion of the sodium silicate layer that is treated with the phosphoric acid and silicate atoms. It is inherent and expected that that the treated layer (second layer) is hydrophilic since these layers are similar to the instantly claimed layers. WO does not teach that the silica particles may be clay or alumina particles.

Verweij et al. teach a treatment of a layer in a steam chamber comprising an acid phosphate compound used as the stabilizer of an acid colloidal silica suspension (col. 2, lines 45-50). However Verweij also teach that the colloidal solution may comprise silica, alumina or magnesia (col. 2, lines 60-65). Therefore it would have been obvious to replace the colloidal silica of WO with colloidal alumina as taught by Verweij to be functional equivalents and known alternatives in the art.

Regarding claim 5, the phosphorous bodies are aluminum triphosphate, which is a phosphate glasses.

Regarding claim 8, colloidal alumina of WO and Verweij reads on the instant claim. Hawley's Condensed Chemical Dictionary discloses colloid chemistry as the study of matter having dimensions between 1 nm and 1 micron. Given that Verweij

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discloses colloidal alumina and in light of this definition, this meets the particle size of claim 8.

Regarding claim 9, WO does not teach specific material thicknesses for the layers, however, the thickness of a layer is well within the grasp of a routineer in the art. Furthermore, the applicant has not shown the significance of the film thicknesses. It would have been obvious to a person having ordinary skill in the art at the time the present invention was made to use any known thicknesses for the respective first and second layers, including those ranges instantly claimed, as determining a layer thickness has been shown to routine knowledge in the art.

Regarding claim 11, since WO teaches the treatment of a top part of a layer these layers are said to be mutually exclusive and therefor said to be adhered to one another.

Regarding claim 16, the materials of WO are assumed to be thermally stable to some degree, furthermore this is supported because the materials of WO are similar to the materials instantly claimed.

Regarding claim 17, WO teaches a treatment to form a second layer, wherein the treatment comprises phosphate ions and silicate particles. The phosphate ions are preferred to be aluminum tri phosphate (col. 2, lines 40-43), which is a monoaluminum compound of phosphate.

Regarding claim 19, the step is a product by process step, the product of WO et al. is substantially similar to the product as presented in instant claim 1 therefore it is said to anticipate it. Even though product-by-process claims are limited by and defined

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by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.”, (In re Thorpe, 227 USPQ 964,966). Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product (In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983), MPEP 2113). Furthermore, it is known to cure these compounds to react together and form a more stabile coating.

Response to Arguments

The rejections over Krautter were removed, due to the applicants' amendment adding structural limitations of placing the first coating on the interior surface of a steam generating device.

Applicant's arguments with respect to claims 1-5, 8-17 and 19 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN C. LANGMAN whose telephone number is

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(571)272-4811. The examiner can normally be reached on Mon-Thurs 8:00 am - 6:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on 571-272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JCL
/Jonathan C Langman/
Examiner, Art Unit 1794

/Callie E. Shosho/
Supervisory Patent Examiner, Art Unit 1794